Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of Improving Public Safety Communications in the 800 MHz Band Consolidating the 900 MHz Industrial/Land Transportation and Business Pool Channels	WT Docket No. 02-55; DA 03-19; DA 03-163

COMMENTS OF THE BORDER AREA COALITION

The Boeing Company;
Consumers Energy Company;
DaimlerChrysler;
Pinnacle West Capital Corp. (the Arizona Public Service Company);
City of San Diego;
San Diego County and Imperial County Regional Communications System;
Wiztronics, Inc.

February 10, 2003

SUMMARY

The solutions contained in the Supplemental Comments of the Consensus Parties ("Supplement"), as they pertain to the Canadian and Mexican border regions, are inadequate and unacceptable in terms of clearly and successfully resolving 800 MHz Public Safety interference, providing "existing proportionate" spectrum allocations, and enabling comparable operations of incumbent licensees in the border regions. The Border Area Coalition respectfully requests that the Commission reject the proposals contained in the Supplement. The risk is too great that the 800 MHz interference problem in the border areas will be unchanged or even exacerbated.

The Border Area Coalition identified several problems with the provisions contained in the Consensus Parties' supplemental filing, including:

(1) The rebanding proposal contained in the Supplement creates a new "double border" problem. The problem disturbs existing double border coordination fixes and is especially problematic to Public Safety licensees. The double border problem also creates incompatible channel assignments, encourages inefficient spectrum utilization, and jeopardizes mutual aid agreements.

(2) The Consensus Parties' supplemental filing does not acknowledge that bilateral agreements must be renegotiated for the border regions to be effectively re-aligned in a manner consistent with the rest of the United States, for Nextel to peacefully co-exist with other licensees in the 800 MHz band, and for Public Safety to have the spectrum it needs in the border regions.

(3) The proposed timeframes are overly optimistic given the need to renegotiate bilateral agreements and the need for adequate NPSPAC coordination.

(4) The proposal contains disproportionate and inequitable border area spectrum allocations both in terms of quantity and quality. This is especially apparent for B/ILT licensees, who lose a substantial number of channels under the proposal, whereas SMR licensees gain more spectrum than Public Safety licensees or B/ILT licensees.

(5) The supplemental filing provides for inadequate border area guard bands. Whereas the heartland is provided with 2 MHz of guard band protection, Mexican border areas are provided a maximum of 1 MHz and Canadian non-Public Safety incumbents are afforded no guard band protection whatsoever. This increases the likelihood of harmful interference.

(6) The technical rules and requirements proposed in the Consensus Parties' Supplement do not consider non-CMRS border area operations above 861 MHz and are unworkable for the border areas due to technological constraints.

(7) The Border Area Coalition is concerned that there will not be sufficient funding for rebanding because of the funding cap, costs caused by double coordination issues, the uncontemplated cost of additional equipment, and costs related to the relocation of Canadian and Mexican incumbents.

(8) The provisions contained in the Supplement reduce existing border area Public Safety interoperability and jeopardize mutual aid agreements.

The Border Area Coalition urges the Commission to explore viable alternatives to the Consensus Plan and its supplemental provisions. The ideal solution would resolve interference in the entire U.S. simultaneously. This would require renegotiation of U.S./Canadian and U.S./Mexican bilateral agreements *prior to* implementing any 800 MHz rebanding plan. The Commission also could help resolve the 800 MHz Public Safety interference problem by taking several actions related specifically to Nextel's operations within the band, including requiring Nextel to discontinue its interference-causing 800 MHz communications, lower its power levels, and/or utilize its proposed funding toward eliminating the interference it causes. General changes to the Commission's existing rules should also be adopted to mitigate border area interference concerns. Finally, The Commission should immediately implement certain technical mitigation efforts to help resolve the 800 MHz interference, implement a revised *Best Practices Guide,* and vigorously enforce its existing interference rules.

The Commission should initiate bilateral negotiations, implement interim technical interference rules to reduce power and sideband emissions, and expeditiously begin work towards developing a comprehensive and equitable solution to provide expanded and reliable Public Safety communications. The "Consensus Plan," as revised, is not the answer.

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COMMENTS OF THE BORDER AREA COALITION

The Border Area Coalition hereby files these comments in response to the Commission's *Public Notice* in the above-captioned proceeding.[1] The Border Area Coalition is comprised of Public Safety, Business and Industrial/Land Transportation ("B/ILT"), Critical Infrastructure Industries ("CII"), and state and local government licensees utilizing 800 MHz frequencies in the Canadian and Mexican border regions of the United States.[2] The Border Area Coalition formed to help resolve 800 MHz interference issues within the Canadian and Mexican border areas in

[1] *See Wireless Telecommunications Bureau Seeks Comment on "Supplemental Comments of the Wireless Consensus Parties" Filed in the 800 MHz Public Safety Interference Proceeding*, Public Notice, WT Docket No. 02-55, DA 03-19 (rel. Jan. 3, 2003). *See also Improving Public Safety Communications in the 800 MHz Band; Consolidating the 900 MHz Industrial/Land Transportation and Business Pool Channels*, Order Extending Time for Filing of Comments, WT Docket No. 02-55, DA 03-163 (rel. Jan. 16, 2003).

[2] Members of the Border Area Coalition include: The Boeing Company ("Boeing"); City of San Diego; Consumers Energy Company; DaimlerChrysler; Pinnacle West Capital Corp. (the Arizona Public Service Company); San Diego County and Imperial County Regional Communications System; and Wiztronics, Inc.

conjunction with solving Public Safety and B/ILT/CII 800 MHz interference issues throughout the United States.

INTRODUCTION

The Canadian and Mexican border areas are vital to both national security and the nation's economy. National security demands require that Public Safety entities in the border areas have sufficient spectrum to perform their critical tasks, both with respect to communications between U.S. entities and between the U.S. and public safety services in Canada and Mexico. Regarding the U.S. economy, the border area includes 17 states, and it is estimated that the border area affects 13.5 percent of the U.S. economy.[3] Considering the "double border"[4] implicated in the supplemental comments filed by the "Consensus Parties" ("Supplement"), the economic impact of the borders areas could be upwards of 27 percent of the U.S. economy.

There are a significant number of diverse entities utilizing 800 MHz for vital Public Safety and critical industrial and commercial communications in the border areas. The Canadian and Mexican border areas of the United States, however, face unique issues with respect to operations in the 800 MHz band. Existing bilateral coordination agreements with Canada and Mexico only make half the spectrum in the 800 MHz band available to U.S. licensees in the border areas. In addition to such spectrum limitations, the bilateral agreements also contain technical provisions so that proposals to increase power levels could exceed international power

[3] Analysis of U.S. Census Bureau and Department of Commerce data indicates that the border region impacts approximately 13.5 percent of all U.S. economic activity as measured by annual payroll figures.

[4] *See* Section I A, *infra*.

limits and coordination agreements. Because of these unique issues, any solution to the 800 MHz interference problem must devote special attention to the border areas.

In December 2002, the Border Area Coalition met with Commission staff to discuss issues of unique interest and concern to border area licensees with regard to resolving 800 MHz interference to Public Safety licensees.[5] Since those meetings, a Supplement, which attempts to address the re-alignment of the 800 MHz band in the Canadian and Mexican border areas, has been released.[6] Unfortunately, the Supplement still does not address adequately the Border Area Coalition's concerns or solve the 800 MHz Public Safety interference problem.

The Consensus Plan's supplemental solutions as they pertain to the Canadian and Mexican border areas are inadequate and unacceptable in terms of clearly and successfully resolving 800 MHz Public Safety interference, providing "existing proportionate" spectrum allocations, and enabling comparable operations of incumbent licensees in the border areas. The Border Area Coalition conducted detailed analyses of four of the U.S. border areas (two areas within the U.S./Mexican Border Region and U.S./Canadian Border Regions 3 and 5)[7] and found that the Supplement does not offer a viable solution for any of the areas studied without significant modification (usually involving renegotiation of bilateral treaties).

As a result of the case studies conducted in the various border areas, the Border Area Coalition attempted to develop workable alternatives or to document actions that would be

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[5] *See* Notice of *Ex Parte* Presentation of the Border Area Coalition, *Improving Public Safety Communications in the 800 MHz Band,* WT Docket No. 02-55 (filed Dec. 19, 2002).

[6] *See Ex Parte* Presentation of the Consensus Parties, *Improving Public Safety Communications in the 800 MHz Band,* WT Docket No. 02-55 (filed Dec. 24, 2002) ("Supplement").

[7] Summaries of the four case studies are attached to these comments as Exhibits A-D.

needed to render the Supplement workable. While different options are potentially possible in the different border areas, there is one common denominator: the Border Area Coalition concludes that the Supplement will not work as proposed and should be rejected.

I. THE CONSENSUS PARTIES' SUPPLEMENT INCLUDES INADEQUATE PROVISIONS FOR THE BORDER AREAS

The attached border region case studies performed for the four U.S. border areas reveal several common problems and concerns with the Supplement. These problems primarily relate to (1) the need for modified bilateral agreements, (2) a gap between the current technical abilities of 800 MHz licensees and those technical capabilities that would be required under the Supplement, and (3) concerns regarding the procedural and funding provisions of the Supplement. The following discusses these common problems in detail.

A. The Consensus Parties' Supplement Creates a New "Double Border" Problem for Border Area Licensees

First, the Supplement essentially creates a new "double border" problem for border area licensees whereby border area licensees must coordinate with both Canada/Mexico and U.S. "heartland" licensees. Although a double border situation currently exists for some Canadian and Mexican border area licensees, these problems have already been resolved. Double border problems would be immensely magnified by the proposed realignment because new solutions will need to be identified. Additionally, whereas Public Safety licensees with double border situations previously had to work with other Public Safety licensees to reach coordination solutions, under the Supplement, Public Safety licensees will have to deal with non-Public Safety licensees. Further, double border problems would be entirely new for NPSPAC licensees. These

new double border problems would increase complications and add years of coordination to the realignment process.

In addition to this time-intensive and costly double coordination requirement, U.S. licensees operating networks that provide coverage both inside and outside border areas will face additional technical hurdles. For example, entities operating systems on both sides of the border area demarcations will be forced to use incompatible spectrum assignments that will result in incompatible NPSPAC and B/ILT/CII systems. This problem may also require existing licensees to inefficiently utilize more spectrum due to the inability to use or re-use existing channels. It is essential to harmonize border area coordination efforts and ensure that border area coordination is completed before any significant rebanding occurs.

B. To Avoid New Double Border Problems, Bilateral Agreements Must First Be Renegotiated

Second, the Border Area Coalition believes that renegotiation of the current Canadian and Mexican 800 MHz agreements is necessary: (1) for the border areas to be effectively re-aligned in a manner consistent with the rest of the United States; (2) for Nextel to peacefully co-exist with Public Safety, B/ILT, CII, and other licensees in the 800 MHz band; and (3) for Public Safety to have the spectrum it needs in the border areas. The Supplement gives short shrift to the need for renegotiating bilateral 800 MHz agreements.[8] Far from being an afterthought, the need for new bilateral agreements is *essential* to eliminating the double border problem and effectively implementing any nationwide comprehensive 800 MHz rebanding solution. Any

[8] The Supplement merely suggests, in a footnote, that "[r]enegotiating spectrum treaties would…make possible optimal spectrum use" and that "the Commission should pursue negotiating these treaties." *See* Supplement at 36 n. 61.

proposal adopted by the Commission should specifically address strategies for successfully negotiating the necessary bilateral agreement changes.

The Consensus Parties' Supplement also does not address the costs that would be incurred for the relocation of Canadian and Mexican incumbents and the additional implementation time that will be needed to reach and deploy international solutions.[9] In addition to creating a harmonized spectrum plan for the entire United States, all necessary renegotiations of bilateral treaties should occur *prior* to the implementation of any solution.

C. The Border Area Relocation Timeframes Contained in the Supplement are Overly Optimistic

Third, the timeframes for border area relocations provided in the Supplement are overly optimistic. At the outset, the time needed to renegotiate bilateral agreements must be considered. Another timing problem is the proposed timeframes for NPSPAC coordination in border areas. Past experience indicates that such international coordination could take up to two years to complete. Combined with the "double coordination" that would be required with heartland U.S. incumbents, the delay would likely be even further exacerbated. The Supplement does not account for these required activities.

D. The Consensus Plan's Supplement Contains Disproportionate and Inequitable Spectrum Allocations

Fourth, existing spectrum allocations to the various industry segments (*i.e.,* Public Safety, B/ILT/CII, SMR) would be disrupted significantly under the Supplement. Most noticeably, the proposals for both the Canadian and Mexican border areas suffer deficiencies with regard to

[9] The Border Area Coalition does not imply that Nextel should bear the burden of funding the relocation of Canadian and Mexican incumbent licensees under revised bilateral agreements. Consideration of such costs, however, is an important component to the overall solution to the 800 MHz interference problem.

B/ILT/CII channel allocations. The original Consensus Proposal stated that the "existing proportionate U.S. land mobile radio channel allocations in the U.S./Mexico and U.S./Canada Border Areas, respectively, will be maintained."[10] The Supplement, however, does not follow through on this representation.

For the Mexican border area, the Supplement notes that all "incumbent non-cellular licensees cannot be accommodated" but suggests that "the Commission allocate more channels for non-cellularized use for incumbent high-site B/ILTs and SMRs."[11] For Canada, the Supplement notes that the Canadian reallocation proposal "is not based on the original allocations of spectrum, but on a licensee's current usage of spectrum" and encourages secondary use of Canadian channels.[12] An examination of the proposed channel assignments reveals that SMR licensees gain considerably more spectrum than Public Safety licensees, and B/ILT/CII licensees lose a substantial number of channels in the four border areas analyzed. The Public Safety spectrum allocation is increased only marginally, even though increasing Public Safety spectrum was one of the originally stated objectives of this proceeding. SMR allocations in the border areas are significantly *increased*, and the B/ILT/CII spectrum allocation is significantly *decreased*. The Commission should make clear that no group of licensees should suffer a disproportionate loss of spectrum.

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[10] *See* Reply Comments of the Private Wireless Coalition, Nextel, and Public Safety Organizations, *Improving Public Safety Communications in the 800 MHz Band,* WT Docket No. 02-55 at 16 (filed Aug. 7, 2002).

[11] *See* Supplement at Appendix G-2.

[12] *See id.* at Appendix G-3.

Further, the issue is not only one of spectrum quantity but also of spectrum quality. The border area channel allocations contained in the Consensus Plan's supplement are unworkable for some licensees given their channel spacing constraints. While adding additional combiner equipment into affected systems may solve channel spacing problems, such fixes would be expensive, resource intensive, and would essentially re-create a potentially harmful cellularized service.

E. The Consensus Plan's Supplement Provides Inadequate Border Area Guard Bands

Fifth, the Supplement does not provide for adequate guard bands in the border areas. For the rest of the United States, the Consensus Proposal anticipates the potential for interference and makes provisions for a 2 MHz of paired spectrum guard band between high-site and low-site operations.[13] The Supplement contains proposed band plans for the border areas.[14] While the plan provides for a *possible* 1 MHz guard band in certain areas of the U.S./Mexico border region (with a .75 MHz guard band in the others), it makes no provision whatsoever for guard bands in the U.S./Canada border regions.[15]

The potential for harmful interference to border area communications under the Supplement is significantly increased because it provides for a *maximum* 1 MHz guard band for the Mexican border area and for the Canadian border regions *there is no provision for a guard*

[13] *See id.* at 10. The Border Area Coalition does not endorse the provisions contained in the Supplement that force B/ILT/CII licensees into guard band spectrum with less interference protection.

[14] *See id.* at Appendix G-1-G-14.

[15] *See id.* at Appendix G-1 and G-2.

band whatsoever.[16] This shortcoming could lead to *increased* Public Safety interference in the border areas after a costly, time consuming, and painful rebanding process. An alternative, presumably, would be for the affected Public Safety or B/ILT/CII licensees to create a guard band using their already limited spectrum allocation. This would further reduce the amount of spectrum available to Public Safety and B/ILT/CII licensees for communications purposes in border areas. This situation is potentially made worse because the Supplement does not mandate limitations on Nextel's out-of-band emissions less than 2 MHz from their transmitting channels, so harmful interference would continue to be experienced in any guard bands provided or created.[17] Any proposal adopted by the Commission should mandate proportionate protections to Public Safety users from Nextel operations.

The trade off contained in the Consensus Parties' Supplement is not the only available option. One specific proposal to mitigate the border area guard band problem would be for Nextel to reduce its spectrum allocations in the border areas to provide needed guard band protection similar to the rest of the United States. The Border Area Coalition believes that the lowest 2 MHz of spectrum in the cellular band should be established as a guard band to protect non-cellular operations from interference. For example, in Canadian Border Regions 7 and 8 and in the Mexican border area, cellular operations are conducted above 861 MHz and non-cellular operations are conducted below. To protect licensees from interference, a guard band should be established in the 861-863 MHz band. In the Mexican border area, this prohibition would provide for a 2 MHz guard band from 861-863 MHz and would also make available an

[16] *Id.*

[17] *See id.* at 43 and Appendix F.

additional 30 channels that could be considered for Public Safety use up to 861 MHz. Similarly, in other border areas, the 2 MHz of cellular spectrum located closest to the non-cellular band should be established as a guard band.

This is an appropriate solution because Nextel, as many commenters have noted, is the principal cause of the interference.[18] Accordingly, the guard band should be located in the cellular band so the onus of rectifying the interference problem is placed on Nextel. Otherwise, licensees that are not causing interference will be burdened with resolving the problem, and may not be able to resolve the problem if they are required to increase their signal strength to levels not otherwise permitted by the rules. Nextel could still use the guard band spectrum, but must be prohibited from employing its cellular architecture in doing so. By establishing a guard band with the 2 MHz of paired cellular frequencies closest to the non-cellular operations, B/ILT/CII and low-site SMR licensees will be provided with some measure of protection.

F. The Technical Rules and Requirements Contained in the Supplement are Unworkable

Sixth, the Border Area Coalition is concerned that Appendix F of the Supplement does not address interference protection in the border areas at all. The procedures that the Consensus Parties have proposed for minimizing interference after the 800 MHz band is realigned do not address the fact that B/ILT/CII and low-site SMR licensees in every border region, except for Canadian Border Regions 7 and 8, will be relocated above 861 MHz. The Consensus Plan's rules are consistently predicated upon the assumption that B/ILT/CII and low-site SMR licensees can operate only below 861 MHz and that only cellular operations will be permitted above 861

[18] *See e.g.* Comments of Cingular Wireless LLC and Alltel Communications, Inc., *Improving Public Safety Communications in the 800 MHz Band,* WT Docket No. 02-55 at 2 (filed May 6, 2002).

MHz. For example, Section 2.1.1 provides that all licensees transmitting in the 851-859 MHz band are "entitled to operate free from measurable interference."[19] The proposed procedures, however, do not address interference protection for licensees operating above 861 MHz. It appears that the drafters of these regulations did not account either for licensees in the border areas operating above 861 MHz or for those operating above 859 MHz where that spectrum has not been designated as guard band.

As part of any plan that is adopted, the Commission must implement interference standards and practices to protect all licensees, including those in the border areas. In particular, the rules must address the fact that, in the border areas, Nextel will often be a *co-channel* licensee operating in close proximity to non-cellular operations. Unless this fact is adequately accounted for, B/ILT/CII and low-site SMR operations in the border areas will be subject to extreme amounts of interference without adequate recourse.

If Appendix F did apply to border area licensees, however, the provisions in the Supplement regarding increasing desired signal levels by 33 dB (between 860.5 and 861.0 MHz) to attain –65 dBm "on the street" levels (from the –98 dBm baseline) are neither technically or economically feasible.[20] A level of –65 dBm is more of a campus wide system level and not possible for a high-site wide area system. At the outset, equipment currently does not exist to provide such marked power increases on current systems without adding more sites and more channels. Increasing Public Safety and B/ILT/CII power simply to overcome interference in areas near Nextel operations as suggested will only complicate the frequency coordination

[19] *See* Supplement at Appendix F-2.

[20] *See id.* at Appendix F-3.

process and make even less spectrum available in the border areas. To meet the increased power provisions contained in the Supplement, many border area incumbents would be forced to redesign their entire systems. Redesigning new radio systems to operate on the increased "on the street" levels prescribed by the Supplement that will also not cause harmful interference to Canadian and Mexican operations requires significantly more equipment, land, technical analysis, and other resources. Further, the increased signal strengths called for in the Supplement would likely violate existing bilateral agreements with Canada and Mexico.

A reduction in commercial power (*i.e.,* the operating power of Nextel and other CMRS providers) may be a workable technical alternative to a relocation scheme.[21] Nowhere, however, does the Supplement identify reduction of commercial power levels as a viable technical solution to reduce harmful interference to Public Safety licensees in the 800 MHz band. Any proposed solution adopted by the Commission should include specific solutions that minimize noise, eliminate the use of wide-band hybrid type combiners, and regulate out-of-channel emissions specifically at low-level sites.

G. Funding Issues

Seventh, the Border Area Coalition has concerns regarding the funding provisions of the Supplement. The Border Area Coalition is concerned that there will not be sufficient funding to retune all licensees because of the funding cap stated in the Supplement, the added costs caused by double coordination issues, the uncontemplated cost of additional equipment, and the costs related to relocation of Canadian and Mexican incumbents if treaties were renegotiated. This is a

[21] *See Ex Parte* Presentation of Motorola, Inc., *Improving Public Safety Communications in the 800 MHz Band,* WT Docket No. 02-55 at slide 5 (filed Sept. 20, 2002) (finding that a 1dB reduction of undesired signal level gives 3dB improvement in C/I+N, whereas a 1dB increase of desired signal level gives only 1dB improvement in C/I+N).

concern for all licensees, but especially for Public Safety (including NPSPAC) licensees, who have consistently stated that they should incur no cost as a result of any proposed 800 MHz band realignment. The Supplement states that "relocations would not commence within a Region unless full funding for…all relocations within the Region is committed and available."[22] By segregating Phase I and Phase II relocation in its "full funding" analysis, however, the Supplement leaves open the possibility that Phase I relocation in a region would be funded and implemented but Phase II relocation would be unfunded and, therefore, undone. If such a scenario occurred, Nextel would occupy channels 1-120 after the Phase I relocation and Public Safety licensees would be stranded and subject to potentially increased interference. A partial 800 MHz rebanding implementation would result in significant incompatibilities between systems and spectrum allocations and make matters far worse than they currently are for all users of the 800 MHz band.

The Border Area Coalition also has concerns regarding specific funding issues. For example, the Supplement does not address the need for new narrow band combiners and the lack of existing equipment (*i.e.,* amplifiers) that can operate at prescribed increased power levels.[23] The Supplement does not adequately address the fact that border area licensees will be required to purchase significantly more equipment, facilities, land, *etc.,* in order to retrofit existing systems to function without interference. Further, the proposal does not provide adequate information regarding funding of the additional/new equipment that would be needed if B/ILT/CII licensees migrate to 900 MHz (migrating licensees would need to move their entire

[22] *See* Supplement at 12.

[23] *See id.* at 42 and Appendix F.

systems, and may need two sets of equipment to maintain current and future mutual aid responsibilities).

Finally, as discussed above, the Supplement does not address the time and costs involved in renegotiating bilateral agreements. Likewise, no financial provisions have been identified to compensate Canadian and Mexican licensees for similar costs that would be required for them to relocate as the result of any renegotiated bilateral agreements or resulting realignments.

H. The Provisions Contained in the Supplement Reduce Border Area Interoperability

Eighth, the Supplement reduces existing border area Public Safety interoperability and acknowledges that its provisions are insufficient with respect to cross border mutual aid services.[24] The Supplement calls for the elimination of the currently contiguous mutual aid frequencies utilized by all U.S. Public Safety entities and by and between Public Safety entities in the United States and Canada/Mexico.[25] It states that "reallocation and realignment of the NPSPAC frequencies to the lower portion of the 800 MHz band will necessitate reexamination and possibly modification of the mutual aid channels shared between the United States and Canada and the United States and Mexico respectively."[26] At the outset, the Proposal acknowledges that bilateral agreement modifications would be required, but brushes aside the issue (especially with respect to the Mexico mutual aid issue), suggesting that "this issue need not be conclusively resolved by the Report and Order in this proceeding."

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[24] *See id.* at Appendix G-4.

[25] *See id.* at Appendix G-4-G-5.

[26] *Id.*

The proposed relocation of NPSPAC channels to a different part of the 800 MHz band creates a problem with reprogramming existing radios that could result in unsafe operational hurdles. Except for Project 25, no production radio can accommodate the 12.5 kHz channel plan in multiple portions of the 800 MHz spectrum. Problems have already been encountered by system users that operate in both border and non-border band plans. In Motorola SmartZone™ networks, Public Safety radios cannot seamlessly switch between base station sites that use different plans. This problem has been worse for users operating in areas about 70 miles from the border. Reallocation of the NPSPAC channels as proposed in the Supplement would require Public Safety users to manually switch the radio "personality" to the plan for the site in the current coverage area. This is unacceptable in emergency situations because of the delayed ability to use the radios. Motorola SmartNet™ systems pose an even greater problem because the systems use only one pool of channels for voice traffic assignment. The pool of available channels must all be within the same plan, and no mixing of border and non-border channels can be made; thus all channels must be within the same 25 kHz plan.

NPSPAC channels currently do not experience this problem anywhere in the country because they are aligned between border and non-border areas. These existing NPSPAC channels have been assigned their channel numbers based on 12.5 kHz channelization. The proposed spectrum for NPSPAC relocation is currently assigned as 25 kHz channels, with a 12.5 kHz offset within the border areas. Discussions with Motorola have indicated that solving this problem is a major effort and would involve firmware/software changes for all models of all 800 MHz radios and network controllers in use and for all versions of the firmware and software in use. Thus, the initial cost of Motorola development and the cost to perform firmware/software and flash upgrades for all radios likely to be used in the border area needs to be included in the

cost to implement the rebanding plan. Many radios in use in Public Safety systems have not been in production for several years and may not have been considered in the determination of these firmware upgrade requirements.

Implementation of the Supplement will lead to the loss of contiguous mutual aid frequencies both in border and non-border areas and will require the international coordination of new mutual aid frequency allocations. Mutual aid agreements currently enable cost-effective cooperative efforts between local Public Safety entities and B/ILT/CII licensees in emergency situations, whereby private licensees supplement local Public Safety efforts or serve as first responders to local public safety emergencies.[27] Some mutual aid efficiencies will be lost between Public Safety and B/ILT/CII licensees under the Supplement because problems with interleaving channels and difficulties with coordination in the border areas will not allow sufficient spectrum for interoperability. This is intolerable given the initial goals of this effort and the importance of border areas in ensuring national security.

In order to maintain existing levels of interoperability, new coordination plans will be required. As discussed above, previous NPSPAC coordination efforts in border areas have taken up to two years to complete. The proposal contained in the Supplement is more complicated (given the "double border" issue) but does not account for the likely delay that will be required to complete the required border area NPSPAC coordinations. Mutual aid agreements between B/ILT/CII licensees and Public Safety licensees would also be pre-empted or jeopardized under the Supplement if B/ILT/CII licensees moved to the 900 MHz band. It is unacceptable for

[27] *See, e.g.,* Initial Comments of The Boeing Company, *Improving Public Safety Communications in the 800 MHz Band,* WT Docket 02-55 at 3 (filed May 6, 2002) (discussing examples of Boeing's mutual aid agreements with Public Safety entities in Kansas, Missouri, and Washington).

Public Safety responders to not have mutual aid channel allocations on both sides of the borders resolved, and any proposal adopted by the Commission should make provisions for a comprehensive solution to this issue.

II. THERE ARE BETTER ALTERNATIVES TO SOLVE THE 800 MHz PUBLIC SAFETY INTERFERENCE ISSUE THAN THE PROPOSALS CONTAINED IN THE CONSENSUS PLAN'S SUPPLEMENT

The Border Area Coalition urges the Commission to explore viable alternatives to the Supplement because less disruptive solutions (*i.e.,* solutions that do not require the unnecessary wholesale rebanding of licensees) are feasible. Among the alternatives available is renegotiating Canadian and Mexican 800 MHz bilateral agreements, requiring Nextel to make technical modifications to its 800 MHz operations, adopting general technical modifications to the Commission's 800 MHz rules to alleviate harmful interference, and implementing and enforcing interference mitigation guidelines.

A. Any 800 MHz Rebanding Solution Should Include Revised Canadian and Mexican Bilateral Agreements To Resolve the Double Border Problem

The Border Area Coalition believes that the ideal solution would resolve interference in the entire U.S., including the border areas, simultaneously. Such a solution would maximize equipment efficiencies (*e.g.,* common radios and spectrum allocations for mutual aid within and outside border areas) and timing and coordination issues. Such a simultaneous solution would require the Commission to renegotiate U.S./Canadian and U.S./Mexican bilateral agreements *prior to* implementing any 800 MHz rebanding plan. The new bilateral agreements should include provisions for the use of Canadian/Mexican channels in the United States only on a non-interference basis following public notice and coordination. The new bilateral agreements should also eliminate the offset channel requirement within the Mexican border area. The

Commission should also advocate bilateral agreements that ensure co-channel and adjacent-channel uses are compatible on both sides of the border and border areas.

If any rebanding were to occur prior to completion of new bilateral agreements, current border area licensees must be permitted to utilize their current channel assignments, including assignments secured through waiver, on a primary basis, during renegotiations. Under a do-no-harm approach, the Commission could implement an exception for border area licensees similar to that offered to Southern LINC by the Consensus Parties under the Supplement.

B. The Commission Could Require Nextel to Make Technical Modifications to its Operations

The Border Area Coalition agrees that the Commission could help resolve the 800 MHz Public Safety interference problem by taking several actions related specifically to Nextel's operations within the band. These actions could provide immediate mitigation of interference problems while bilateral agreements are renegotiated and long-term solutions are implemented. The Commission could require that Nextel cease causing harmful interference to Public Safety or vacate the 800 MHz band entirely as opposed to shifting Nextel's operation around within a rebanding proposal. The Commission should also consider requiring Nextel to lower the power levels of its 800 MHz operations as an effective means of eliminating interference. Finally, the Commission could require Nextel to pledge the $850 million it proposes to spend in the Supplement toward eliminating the interference it causes.

C. General Modifications to Technical Rules Would Alleviate the 800 MHz Interference Problems

Several technical rules should also be adopted to mitigate border area interference concerns. First, transmitters should be installed pursuant to OEM recommendations using combiners with band-pass/tunable cavities or filters designed to minimize interference where

appropriate. Second, the Commission should require elimination of wide-band hybrid type combiners where the technology is known to contribute to interference problems. Third, the Commission should require that all proposed low level site installations be coordinated and documented to allow database searches to be performed to aid in interference investigation. Fourth, the Commission should adopt new rules to regulate out-of-channel emission specifications at low site/low power sites (encourage local planning (land use)) and other solutions that: (1) protect Public Safety agencies and CII users from the effects of low site/low power transmitter site interference; (2) provide standards that are flexible enough not to restrict SMR and B/ILT system operators but protect Public Safety from harmful interference; (3) require interfering parties to provide Public Safety agencies with enhanced coverage to overcome harmful interference on a selective basis; and (4) ensure that coordination rules take into account possible impacts to Public Safety agencies and quasi public safety operations.

D. The Commission Should Immediately Implement Guidelines to Mitigate 800 MHz Interference

The Commission should immediately implement certain technical mitigation efforts to help resolve the 800 MHz interference problem. In addition to considering reducing 800 MHz CMRS providers' power levels, the Commission should also vigorously enforce its existing interference rules and immediately implement a revised *Best Practices Guide.*[28] If the

[28] *See Avoiding Interference Between Public Safety Wireless Communications Systems and Commercial Wireless Communications Systems at 800 MHz, A Best Practices Guide, available at* http://www.apcointl.org/frequency/downloads/BPG.pdf. Potential revisions to the *Best Practices Guide* include: improving transmitter spurious emissions specifications for CMRS systems, eliminating hybrid combiners and replacing them with tuned cavity combiners, and using balanced coverage models. *See, e.g.,* Initial Comments of Pinnacle West Capital Corp., *Improving Public Safety Communications in the 800 MHz Band,* WT Docket No. 02-55 at 22-23 (filed May 3, 2002).

Commission adopted such procedures immediately, it could "buy time" while bilateral negotiations are being conducted or even preempt the need for such a drastic rebanding solution entirely. Active Commission enforcement of the *Best Practices Guide*, as amended, combined with the technical fixes suggested above, would be an integral aspect of effective interference mitigation.

Requiring Public Safety, B/ILT, and CII licensees to increase power, as the Supplement proposes, runs counter to the current technological and regulatory trends. The Border Area Coalition instead believes that reducing CMRS interference limited systems' ("ILS") transmission power levels is a permanent solution to the 800 MHz Public Safety interference problem that merits additional consideration by the Commission. More specifically, the Commission should consider requiring 800 MHz CMRS providers to implement a 10 dB power reduction to 10 watts Effective Radiated Power ("ERP") per channel. Such a reduction would allow for a -80 dBm signal "on the street" in many areas for CMRS systems. This equalizing effect (-80 versus –98 for Public Safety and B/ILT) would not unduly harm such CMRS operations since most of its low level sites would be still within six miles of the subscriber radio and yet would provide a significant reduction in interference threshold. 800 MHz CMRS providers would continue to have approximately 20 dB of margin for in-building penetration. Power reduction is especially relevant because technology and regulation is moving in the direction of low power, spread spectrum technologies.

E. Appendix F of the Supplement Should Adequately Address Border Area Interference Issues

Appendix F of the Supplement promises to "substantially eliminate the current incidence of CMRS-Public Safety interference in the 800 MHz band," but does not provide adequate

supporting information.[29] The Border Area Coalition believes that Appendix F does not contain adequate provisions for interference mitigation in the border areas. Because of these deficiencies, Appendix F is of questionable value.

For instance, the Supplement states that "[i]nterference issues related to…OOBE will be virtually eliminated outside of the new 800 MHz Guard Band."[30] The Supplement is likely referring to the 2 MHz guard band proposed for the heartland. The Supplement, however, does not address OOBE interference in the border areas lacking adequate guard bands.

Another example of a technical deficiency in Appendix F is its condition that, to obtain post-realignment interference protection, the "non-cellular licensee's base station to mobile transmissions in the affected area [must] have a signal strength of –98 dBm or better if it is an existing system, and a signal strength of –95 dBm or better in the case of new or replacement systems."[31] Requiring Public Safety and B/ILT/CII licensees to design and build networks with a minimum –95 dBm signal level will increase the costs to design and build networks considerably. This requirement also sets up a "power war" with CMRS system operators. It would be more beneficial if ILS-type systems were required to reduce their power levels as previously mentioned. Otherwise, the Public Safety noise-limited system ("NLS") architecture will need to be modified to provide for a "cellular-like architecture" to meet these "on the street" signal strength requirements. In addition, for both existing and new systems, it is difficult to evaluate whether the revised *Best Practices Guide* will aid in mitigating interference for the

[29] *See* Supplement at Appendix F-1.

[30] *Id.*

[31] *See id.* at 41.

minimum power levels provided. This is due, in large part, because the revised guide has yet to be written.[32]

If the interference thresholds stated in the Supplement are accurate, Mexican border area Public Safety systems would be required to operate on as much as –62 dBm of signal strength in order to file an interference complaint (under the proposed reallocation, Public Safety would inhabit spectrum up to 860.9875 MHz). Since a 2 MHz guard band is the standard for the rest of Public Safety, a 2 MHz guard band should be the standard for all border areas. It appears as if interference in the Mexican border area between ILS and NLS will still exist unless a 2 MHz guard band between 861-863 MHz is provided. This guard band should come out of Nextel's spectrum – not Public Safety spectrum.

Section 2.2.2 of the Supplement contains threshold requirements 800 MHz licensees must meet in order to complain about interference.[33] More specifically, an incumbent would be prohibited from complaining about harmful interference unless its "system and its components are up-to-date per manufacturer service or maintenance bulletins regarding the system, its hardware and software, including both the infrastructure and the subscriber units."[34] This places an unreasonable burden on system operators and provides the interfering party with an excuse not to fix the problem. At the outset, it is unclear who would be responsible for determining whether a NLS system operator has met the threshold requirement. The requirement is also arbitrary because most service bulletins (which are released at least monthly) have little or

[32] *See id.* at Appendix F-5 (proposing the creation of a working group to revise the *Best Practices Guide*).

[33] *See id.* at Appendix F-3 and F-4.

[34] *See id.*

nothing to do with any condition that contributes to or causes interference. Appendix F should be modified to require implementation of only those service bulletins directly related to interference between ILS and NLS systems and that NLS system operators receive notification of such requirements.

Despite all of the technical and procedural discussion about solving Public Safety interference, Appendix F of the Supplement states that CMRS operators will assist Public Safety as long as "assistance does not degrade CMRS service capacity or quality, is of a temporary or interim nature, or is otherwise acceptable to the CMRS licensee."[35] This verbiage must be clarified to ensure that it in no way absolves CMRS operators from mitigating harmful interference to non-CMRS systems. The Commission should carefully study the proposals contained in Appendix F and develop technical standards for mitigating interference that are applicable for all users of the 800 MHz band – including CMRS system operators.

III. CONCLUSION

For the foregoing reasons, the Border Area Coalition respectfully requests that the Commission reject the Consensus Proposal's Supplement as presented. It does not adequately address or resolve issues specifically related to Canadian and Mexican border areas. The risk is too great that the 800 MHz interference problem in the border areas will be unchanged or even exacerbated by implementation of the Consensus Plan, as supplemented. Because existing Canadian and Mexican 800 MHz bilateral agreements must be renegotiated for 800 MHz Public Safety interference to be equitably mitigated in the border areas, the Commission should initiate such negotiations, implement interim technical interference rules to reduce power and sideband

[35] *See id.* at Appendix F-4.

emissions, and expeditiously begin working towards developing a comprehensive and equitable solution to provide expanded and reliable Public Safety communications.

The Border Area Coalition has provided the Commission with case studies that clearly demonstrate why the Supplement will not work in the border areas. It is imperative that any realignment of the 800 MHz band provide the same capabilities that exist today. The Border Area Coalition encourages the Commission to continue to work with all 800 MHz users to provide a solution for all types of licensees in all geographic areas and regions, including the Canadian and Mexican border areas.

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